

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP2004/006251

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C23C2/06 C23C2/26 C23C2/40 C25D7/06 C25D5/36

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C23C C25D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 564 604 B2 (JARTOUX XAVIER ET AL) 20 May 2003 (2003-05-20) cited in the application	1-3,10, 27-30, 42,43
Y	column 1, line 7 - column 4, line 52  claims 1,2,4-7 figures 1,2	4-7, 31-33
Y,P	DE 102 57 737 B (THYSSEN KRUPP STAHL AG) 26 February 2004 (2004-02-26) page 2, paragraph 1 - page 4, paragraph 23 claims 1-3,6-8	4-7, 31-33

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- \*&\* document member of the same patent family

Date of the actual completion of the international search

8 October 2004

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A Y	DE 100 39 375 A (SMS DEMAG AG ; ARDENNE ANLAGENTECH GMBH (DE); FRAUNHOFER GES FORSCHUNG) 28 March 2002 (2002-03-28) column 1, paragraph 1 - column 2, paragraph 5 column 4, paragraph 12 - paragraph 17 column 6, paragraph 20 - paragraph 21 claims 1-3,10-20	1-3, 5-30, 34-43 4-7, 31-33
A	PATENT ABSTRACTS OF JAPAN vol. 0161, no. 44 (C-0927), 10 April 1992 (1992-04-10) & JP 4 002758 A (NIPPON STEEL CORP), 7 January 1992 (1992-01-07) abstract	1-3, 8, 10, 27-30, 35, 36
A	PATENT ABSTRACTS OF JAPAN vol. 0186, no. 62 (C-1287), 14 December 1994 (1994-12-14) & JP 6 256925 A (NIPPON STEEL CORP), 13 September 1994 (1994-09-13) abstract	1-3, 8-15, 28, 35-37
A	"ASM HANDBOOK: SURFACE ENGINEERING" 1995, ASM INTERNATIONAL, US, METALS PARK 5, XP002298196 page 339 - page 340 page 713 - page 714	11-14
A	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 05, 3 May 2002 (2002-05-03) & JP 2002 012958 A (NKK CORP), 15 January 2002 (2002-01-15) abstract	1, 27, 42
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 04, 30 April 1997 (1997-04-30) & JP 8 325689 A (NIPPON STEEL CORP), 10 December 1996 (1996-12-10) abstract	1-3, 8, 9, 27, 42
A	PATENT ABSTRACTS OF JAPAN vol. 0122, no. 83 (C-518), 3 August 1988 (1988-08-03) & JP 63 062855 A (TOYOTA MOTOR CORP), 19 March 1988 (1988-03-19) abstract	1-3, 8-20, 27, 42

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/006251

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6564604	B2	22-11-2001	FR 2807447 A1 BR 0102747 A CA 2343340 A1 EP 1143029 A1 JP 2001353548 A US 2001042393 A1	12-10-2001 04-12-2001 07-10-2001 10-10-2001 25-12-2001 22-11-2001
DE 10257737	B	26-02-2004	DE 10257737 B3 WO 2004053203 A2	26-02-2004 24-06-2004
DE 10039375	A	28-03-2002	DE 10039375 A1 AU 7840901 A WO 0214573 A1	28-03-2002 25-02-2002 21-02-2002
JP 4002758	A	07-01-1992	NONE	
JP 6256925	A	13-09-1994	NONE	
JP 2002012958	A	15-01-2002	CN 1423708 T EP 1288325 A1 WO 0181646 A1 US 2003175548 A1	11-06-2003 05-03-2003 01-11-2001 18-09-2003
JP 8325689	A	10-12-1996	NONE	
JP 63062855	A	19-03-1988	NONE	